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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/676,670	Applicant(s) Eglit et al.	
	Examiner T. Johnson	Group Art Unit 2723	

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE ___3___ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) ___1-28___ is/are pending in the application.

    Of the above claim(s)_____ is/are withdrawn from consideration.

☐ Claim(s)_____ is/are allowed.

☒ Claim(s) ___1-28___ is/are rejected.

☐ Claim(s)_____ is/are objected to.

☐ Claim(s)_____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on_____ is ☐ approved ☐ disapproved.

☒ The drawing(s) filed on ___5/12/98___ is/are objected to by the Examiner.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

    ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

    ☐ received.

    ☐ received in Application No. (Series Code/Serial Number)_____.

    ☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

    *Certified copies not received:_____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____   ☐ Interview Summary, PTO-413

☒ Notice of References Cited, PTO-892   ☐ Notice of Informal Patent Application, PTO-152

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948   ☐ Other_____

Office Action Summary

Part III Detailed Action

Drawings

1.   The drawings are objected to because in Fig. 4, blocks 480 and 490, the last letters of "CIRCUIT" (i.e. "T") and "INTERPOLATOR" (i.e. "R") are respectively illegible The first "M" in "TO LOCAL MEMORY" in block 510 of Fig. 6 is also illegible. Correction is required.

Disclosure

2.   The disclosure is objected to because of the following informalities: On page 12, line 18, it is not clear if "(TM)" is intended to mean trademark. If so, it should be superscripted. The sentence bridging pages 16-17 does not make sense. Appropriate correction is required.

Claim Objections

3.   Claims 26 and 27 are objected to because of the following informalities: For claim 26, line 2, add "of" after "steps" and before "storing"; for claim 27, line 1, there is a claim number missing which is needed to indicate which claim claim 27 depends on; and for claim 28, line 8, add "a" after "using". Appropriate correction is required.

4.   Claim 27 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form.

        Claim 27, line 1, recites "The method of claim wherein". Therefore, claim 27 does not further limit a previous claim. Applicant should indicate which claim is intended for claim 27 to be dependent on.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the first paragraph of 35 U.S.C 112:

        The specification shall contain a written disclosure of the invention, and the manner and process of making an using it, in such full, clear, concise, and exact terms as to enable any

person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6.   Claims 4 and 16 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention.

For claims 4 and 16, both on line 2, there is no support from the specification for claim 4 "wherein the DPCM decoder compresses" (emphasis added). On page 6, line 20 to page 7, line 5, the decoder provides for decompressing rather than compressing, whereas the encoder compresses. Thus, it appears that "decoder" should be changed to "encoder".

7.   The following is a quotation of the second paragraph of 35 U.S.C 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8.   Claims 10-12 and 22-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claims 4 and 16, both on line 2, these claims conflict with their independent claims, claims 1 and 13, which both recite "a decoder ... for decompressing", and it is not clear from the claims how a decoder provides for compressing.

Claims 10 and 22, both on line 2, apparently contain the trademark/trade name "MVA", assuming the Applicants intend (TM) to mean trademark on page 12, line 18. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is

used to identify/describe "Motion Video Architecture" and, accordingly, the identification/description is indefinite.

Claim 24 recites the limitation "said memory circuit" on lines 12-13. There is insufficient antecedent basis for this limitation in the claim.

For claim 27, the claim, there is insufficient antecedent basis for the entire claim, since the claim (see line 1) does not refer to any previous claim, but the claim is apparently a dependent claim, as indicated on line 1. Claim 27 must depend on either claim 25 or claim 26, and will be treated as depending on claim 25.

Claim 28 recites the limitation "the upscaled image" on lines 22. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

10. Claims 1-6 and 24-27 are rejected under 35 U.S.C. 103 as being unpatentable over the admitted prior art in the Background of the Applicant's specification in view of Acampora, 4,691,233.

For claim 1, a graphics controller circuit for upscaling a source video image comprising scan lines, each with pixels is provided in the Background on page 4, lines 1-10. An encoder and decoder are not provided in the Background; however, using coders and decoders in interpolation systems are very common in video display systems as evidenced by Acampora in Fig. 7, for example. The local memory of the Background can be used with Acampora between the coder and decoder for assisting in line interpolation, or the system of Acampora can be used with the graphics controller in the Background, where it is well known and conventional that

graphics controllers are used with encoding systems, and that local memories are used with encoding systems. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the encoder and decoder of Acampora with the system in the Background, since both systems are in the same environment of interpolating video signals, because Acampora provides for at least three different compressors in one system in Fig. 7, blocks 614, 18, and 26, thus providing for bandwidth and memory conservation for "drastically reducing the data rate" - c. 3, lines 40-47, and also provides for anti-alias and ghost reduction filters(commonly used in TV systems), thus providing for a clear video signal. In any case, a local memory is provided by Acampora in Fig. 7 by buffers 28 and 48 and in the Background on page 5, lines 5-10. Interpolating the decompressed pixel data and a second scan line for an upscaled image is provided by Acampora in Fig. 7, block 662, and is also provided in the Background on page 5, lines 1-10.

For claim 2, a display memory for storing the first and second scan lines of pixel data is prior to encoding and interpolating is suggested by block 12 of Fig. 7 of Acampora, since that is the source of the scan lines, which is provided on page 4, lines 1-3, and is further provided in the Applicants Background in the first full paragraph on page 4.

For claim 3, a DPCM decoder and DPCM encoder are provided by Acampora in Fig. 7 and in the title.

For claim 4, compressing the data set by half is provided in c. 10, lines 45-50 of Acampora.

For claim 5, page 7, lines 10-11 of the Applicants specification appears to be the extent of the disclosure on "a polyphase interpolator", which provides no detailed description. Therefore, it would've been obvious to one having ordinary skill in the art at the time the invention was made to use a polyphase interpolator, since it does not appear to be critical, and does not appear to provide any unexpected results by using a polyphase interpolator in lieu of some other conventional and well known interpolator, such as the interpolators of Acampora as shown in at least Fig. 7. The previous rejection is separate from the following rejection of claim 5. For claim 5, while the Applicants Background and Acampora do not explicitly provide for a polyphase interpolator, they are conventional and well known, official notice, and can be used

with as the interpolators of either the Applicants Background or Acampora. It would've been obvious to one having ordinary skill in the art at the time the invention was made to use a polyphase interpolator, since they are conventional and well known, and because the invention of Acampora or the Applicants Background do not require a specific type of interpolator to function.

For claim 6, with reference to Fig. 7, a first adder generating a difference is provided by adder 16, a quantizer is provided quantizer 18, a recoverer circuit is provided by block 660, a second adder is provided by adder 22, and a predictor is provided by block 24.

For claim 24, see the rejection of claim 1 above.

For claim 25, see the rejection of claim 3 above.

For claim 26, see the rejection of claim 2 above.

For claim 27, see the rejection of claim 4 above.

11.   Claim 7 is rejected under 35 U.S.C. 103 as being unpatentable over the admitted prior art in the Background of the Applicant's specification in view of Acampora, 4,691,233, as applied to claims 1-6 and 24-27 above, and further in view of Sabri, 4,368,487 and Jones.

For claim 7, Acampora does not explicitly provide for a set of flip-flops in the predictor, but does provide for a delay, which is conventionally provided by delay flip-flop(s). Sabri also provides for a DPCM system for compressing video signals in the abstract, where the DPCM predictor uses delays as noted in the paragraph starting in c. 2, line 63. Acampora can use the predictor of Sabri by substitution or updating. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the predictor of Sabri, since it is used in a video DPCM system for reducing blur of moving images, and because of other advantages provided beginning in c. 1, line 48. None of the above references explicitly note the exact composition of the circuitry at the base level as to what comprises the delays in the predictor. However, it is very common for these delays to be flip-flops, because delay flip-flops are basic circuit elements that are conventionally used for such a purpose. Thus the above references can use D flip-flops if they do not already. Jones provides a textbook description of D flip-flops on pages 216-217 and shows the bit input and output of this memory device in Fig. 8-22. It would have been obvious to one having ordinary skill in the art at the time the invention was made to

use D flip-flops for delays in a predictor circuit provided by Acampora and Sabri above, since

they are simple to design for due to the "truth table" being "quite simple", and because D flip-

flops are "widely used" as noted in the second paragraph on page 217, and are also readily

available.

12. Claims 8 and 9 are rejected under 35 U.S.C. 103 as being unpatentable over the

admitted prior art in the Background of the Applicant's specification in view of Acampora,

4,691,233, as applied to claims 1-6 and 24-27 above, and further in view of Zschunke,

3,927,372.

For claim 8, Acampora does not provide for an override circuit. Zschunke also provides

for addressing the conventional quantization problem of slope overload in c. 1, lines 10-62, and

further provides for it in a DPCM system as claimed in this case. Avoiding the overload

condition is provided in c. 1, lines 45-62. Because this is an inherent problem in picture signals,

the monitoring device of Zschunke can be used by Acampora by addition as an override circuit.

It would have been obvious to one having ordinary skill in the art at the time the invention was

made to use the override circuit of Zschunke, since it provides for a better picture signal by

providing proper quantization for the inherent large amplitude variations.

For claim 9, Zschunke provides for changing a predicted value to correspond to a

present pixel in c. 1, lines 45-62.

13. Claims 10-12 are rejected under 35 U.S.C. 103 as being unpatentable over the admitted

prior art in the Background of the Applicant's specification in view of Acampora, 4,691,233 and

Zschunke, 3,927,372, as applied to claims 8 and 9 above, and further in view of Bindlish et al.,

5,608,864.

For claim 10, the graphics controller provided in the Background does not provide for an

MVA block. In light of the specification and Bril et al. in c. 5, lines 10-20, cited in the "Prior art

not relied upon" section below, MVA stands for Motion Video Architecture, a trademark of Cirrus

Logic, Inc., which is also provided by Bindlish et al. Bindlish et al. provides for the claimed MVA

as noted above, for a decoder in Fig. 6, block 652, and for a local memory as block 601. An

encoder is inherently provided, since there would otherwise be no need for a decompressor.

Using an encoder in the same block is provided in the prior art noted by Bindlish et al. in c. 3,

lines 45-50, which can also be used by Bindlish et al. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a coder with the circuit, since coding provides for reduced bandwidth and memory savings, and having it in the same block reduces space requirements. A coder and decoder system is already provided by Acampora and Zschunke in Figs. 4 and 5. An override circuit can also be used by Bindlish et al. for the reasons given above with respect to claims 8 and 9, which remain the same, and with similar reasoning for the coder above. A DPCM encoder is not explicitly provided by Bindlish et al., but is suggested that it is either used or can be used, since the system environment is that of motion video, which is conducive for DPCM coding, which is provided by Acampora and Zschunke in the claims above. Bindlish et al. suggest various types of compression in c. 10, line 67. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use DPCM, since it is an efficient compression conventionally used in motion video, and for the advantages of the DPCM compression systems of Acampora and Zschunke noted above.

For claim 11, a video controller for sending graphics pixels is provided by Bindlish et al. in the first sentence of the abstract, and in Fig. 6 and c. 11, lines 44-55 and c. 12, lines 49-67, and a multiplexer for receiving the graphics pixels and pixel data of the upscaled video image, and for selectively sending to a display unit one of these is provided by Bindlish et al. in at least Fig. 6, multiplexer 635.

For claim 12, see the rejection of claim 2 above.

14.	Claims 13-18 are rejected under 35 U.S.C. 103 as being unpatentable over the admitted prior art in the Background of the Applicant's specification in view of Acampora, 4,691,233, and Bindlish et al., 5,608,864.

For claim 13, see the rejection of claim 1 above, which is incorporated herein by reference. A display unit is provided in the Background on page 3, lines 1-5. The Background and Acampora do not explicitly provide for a video image and graphics/text data, but is suggested by the Background citing a graphics controller chip, which obviously provides for graphics. A display memory is provided as noted above for claim 1, but does not explicitly provide for storing graphics/text. Bindlish et al. provides for graphics/text at least in c. 1, lines 30-40 and lines 55-65, c. 5, lines 20-26, and is considered within the scope of Bindlish et al.

Graphics/text data can also be used by Background and Acampora as such data may already be provided, and otherwise can be added. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use graphics/text data, since this provides for a more detailed picture with more information, and is thus more useful.

For claims 14-18, see the rejection to claims 2-6 above respectively, which are incorporated herein by reference.

For claim 17, see the rejection of claim 5 above, of which argument apply equally to Bindlish et al., since they also provide for interpolation.

15.   Claim 19 is rejected under 35 U.S.C. 103 as being unpatentable over the admitted prior art in the Background of the Applicant's specification in view of Acampora, 4,691,233, and Bindlish et al., 5,608,864, as applied to claims 13-18 above, and further in view of Sabri, 4,368,487 and Jones.

For claim 19, see the rejection to claim 7, which applies equally herein.

16.   Claims 20-23 are rejected under 35 U.S.C. 103 as being unpatentable over the admitted prior art in the Background of the Applicant's specification in view of Acampora, 4,691,233, and Bindlish et al., 5,608,864, as applied to claim 13-18 above, and further in view of Zschunke, 3,927,372.

For claims 20-23, see the rejection of claims 8-11 above.

17.   Claim 28 is rejected under 35 U.S.C. 103 as being unpatentable over the admitted prior art in the Background of the Applicant's specification in view of Acampora, 4,691,233, as applied to claims 1-6 and 24-27 above, and further in view of Bindlish et al., 5,608,864.

For claim 28, see the rejection of claims 1 and 11 above.

Non - statutory Double Patenting

18.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19.   Claims 1, 3, 5, 6, 8-10, 13, 15, 17-18, 20-22, and 24-25 are rejected under the judicially created doctrine of double patenting over claims 3, 4, 6, 10, 11-13, and 16-17 of U. S. Patent No. 5,768,507. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

Claim 1 of the instant application (09/076,670) is broader and corresponds to claim 3 of patent 5,768,507. The words "first" and "second" of this application for claim 1 correspond to the words "present" and "subsequent" of 5,768,507, and retrieving is at least obviously, if not inherently, provided by claim 3 of the patent, since otherwise it could not decompress.

Claim 3 of the instant application corresponds to part of claim 3 of 5,768,507.

For claim 5 of the instant application, page 7, lines 10-11 of the Applicants specification of the instant application appears to be the extent of the disclosure on "a polyphase interpolator", which provides no detailed description. Therefore, it would've been obvious to one having ordinary skill in the art at the time the invention was made to use a polyphase interpolator with the disclosure of the patent, since it does not appear to be critical, and does not appear to provide any unexpected results by using a polyphase interpolator in lieu of some other conventional and well known interpolator. The previous rejection is separate from the following rejection of claim 5. For claim 5, while the Applicants Background and Acampora do not explicitly provide for a polyphase interpolator, they are conventional and well known, official notice, and can be used with as the interpolators of either the Applicants Background or Acampora. It would've been obvious to one having ordinary skill in the art at the time the invention was made to use a polyphase interpolator, since they are conventional and well known, and because the invention of Acampora or the Applicants Background do not require a specific type of interpolator to function.

Claim 6 of the instant application corresponds to part of claim 3 of the patent.

For claim 8 of the instant application, claim 3 of the patent explicitly provides for the override circuit which generates a predicted value for the first pixel, which at least inherently

exists for the purpose of avoiding overload in DPCM, since this is why the override circuit is built. (Refer to at least the title and the first and fourth full paragraph in c. 4 of the patent, and the full paragraph on page 22 and the paragraph bridging pages 23-24 of the instant application, which set forth that the generation of the predicted value for the first pixel data is what provides for avoiding "a overload condition in DPCM decoding and encoding" as claimed in claim 8 of the instant application.)

For claim 9 of the instant application, changing a predicted value is provided by the override circuit of claim 3 of the patent, which is for changing or "overridding" the typical predicted value, and is more specifically provided by the multiplexer claimed in claim 4 of the patent.

Claim 10 of the instant application corresponds to claim 6 of the patent. It is at least obvious, if not inherent, that the override circuit is provided in the MVA, since the override circuit is integrally connected to both the encoder and decoders as disclosed in at least the claims, and decoder's multiplexer is part of the override circuit, where this multiplexer is explicitly claimed in claim 5 of the patent, from which claim 6 depends. Therefore, the MVA block contains at least part, if not all, of the override circuit as claimed. It is further obvious, since both the encoder and the override circuit are coupled together to provide a predicted value, and because the purpose of the override circuit is due to the predictor of the encoder to which it is fundamentally connected by basic component circuitry.

Claim 13 of the instant application corresponds to claim 10 of the patent, where first and second scan lines obviously correspond to present and subsequent scan lines.

Claim 15 of the instant application corresponds to part of claim 10 of the patent.

For claim 17, see the rejection of at least claim 5 above, with respect to the double patenting rejection.

Claim 18 of the instant application corresponds to part of claim 10 of the patent.

For claims 20 and 21, see the double patenting rejection of claims 8 and 9 above of the instant application. Claims 20 and 21 of this application correspond to claims 10 and 11 of the patent, where an override circuit is provided for changing a predicted value.

Claim 22 of the instant application corresponds to claim 13 of the patent. It is at least obvious, if not inherent, that the override circuit is provided in the MVA, since the override circuit is integrally connected to both the encoder and decoders as disclosed in at least the claims, and decoder's multiplexer is part of the override circuit, where this multiplexer is explicitly claimed in claim 12 of the patent, from which claim 13 depends. Therefore, the MVA block contains at least part, if not all, of the override circuit as claimed. It is further obvious, since both the encoder and the override circuit are coupled together to provide a predicted value, and because the purpose of the override circuit is due to the predictor of the encoder to which it is fundamentally connected by basic component circuitry.

Claim 24 of the instant application corresponds to claim 16 of the patent. Claim 16 has a limitation that claim 24 does not by generating a predicted value. Claim 16 obviously provides for the second scan line of claim 24 by reciting a subsequent scan line in the interpolation step, and obviously retrieves a second or subsequent scan line, since otherwise it could not interpolate it.

Claim 25 of the instant application corresponds to claim 17 of the patent

20. Claims 2 and 14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 4, 6, 10, 11-13, and 16-17 of U. S. Patent No. 5,768,507 in view of the Applicants admitted prior art in the Background of the specification of the instant application.

For all rejections herein, the above rejections over the patent, 5,768,507, are incorporated herein.

For claims 2 and 14, a display memory for storing the first and second scan lines of pixel data is prior to encoding and interpolating is provided in the Applicants Background in the first full paragraph on page 4. It is practically inherent that the scan lines be stored before being processed, so that it would've been obvious to one having ordinary skill in the art at the time the invention was made to store the scan lines before interpolation.

21. Claims 4, 16, and 27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 4, 6, 10, 11-13, and 16-17 of U. S. Patent No. 5,768,507 in view of Acampora, 4,691,233.

For all rejections herein, the above rejections over the patent, 5,768,507, are incorporated herein.

For claims 4, 16, and 27, compressing the data set by half is provided in c. 10, lines 45-50 of Acampora, which is a conventional and well known compression ratio that can be used by the system in the patent claims. It would've been obvious to one having ordinary skill in the art at the time the invention was made compress by half, since this is a conventional and well known ratio, and because the decimation of Acampora is a simple well known circuit.

22.   Claims 7 and 19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 4, 6, 10, 11-13, and 16-17 of U. S. Patent No. 5,768,507 in view of Sabri, 4,368,487 and Jones, "Principles and Applications of Digital Electronics".

For all rejections herein, the above rejections over the patent, 5,768,507, are incorporated herein.

For claim 7 and 19, the patent claims do not explicitly provide for a set of flip-flops in the predictor, but this is conventionally provided in predictors by delay flip-flop(s). Sabri also provides for a DPCM system for compressing video signals in the abstract, where the DPCM predictor uses delays as noted in the paragraph starting in c. 2, line 63. The patent system can use the predictor of Sabri by substitution or updating. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the predictor of Sabri, since it is used in a video DPCM system for reducing blur of moving images, and because of other advantages provided beginning in c. 1, line 48. Sabri does not explicitly provide for the exact composition of the circuitry at the base level as to what comprises the delays in the predictor. However, it is very common for these delays to be flip-flops, because delay flip-flops are basic circuit elements that are conventionally used for such a purpose. Thus Sabri can use D flip-flops if he does not already. Jones provides a textbook description of D flip-flops on pages 216-217 and shows the bit input and output of this memory device in Fig. 8-22. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use D flip-flops for delays in a predictor circuit provided by Sabri and the patent system above, since they

are simple to design for due to the "truth table" being "quite simple", and because D flip-flops are

"widely used" as noted in the second paragraph on page 217, and are also readily available.

23.   Claims 11, 23, and 28 are rejected under the judicially created doctrine of obviousness-

type double patenting as being unpatentable over claims 3, 4, 6, 10, 11-13, and 16-17 of U. S.

Patent No. 5,768,507 in view of Bindlish et al., 5,608,864.

For all rejections herein, the above rejections over the patent, 5,768,507, are

incorporated herein.

For claims 11 and 23, a video controller for sending graphics pixels is provided by

Bindlish et al. in the first sentence of the abstract, and in Fig. 6 and c. 11, lines 44-55 and c. 12,

lines 49-67, and a multiplexer for receiving the graphics pixels and pixel data of the upscaled

video image, and for selectively sending to a display unit one of these is provided by Bindlish et

al. in at least Fig. 6, multiplexer 635. The conventional and well known video controller and

multiplexer of Bindlish et al. can be used by the patent system in conjunction with the graphics

controller. It would've been obvious to one having ordinary skill in the art at the time the

invention was made use the video controller and multiplexer of Bindlish et al., since they provide

for parallel pipelines and various compression formats as noted in at least the abstract.

For claim 28, see the rejection of at least claims 1, 3, and 11, with respect to the double

patenting rejection.

24.   Claims 12 and 26 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over claims 3, 4, 6, 10, 11-13, and 16-17 of U. S. Patent

No. 5,768,507 in view of Bindlish et al., 5,608,864, and further in view of the admitted prior art in

the Background of the Applicant's specification.

For all rejections herein, the above rejections over the patent, 5,768,507, are

incorporated herein.

For claims 12 and 26, receiving pixel data of the first scan line from a display memory is

provided in the Applicants Background in the first full paragraph on page 4. It is practically

inherent that the scan lines be stored before being processed, so that it would've been obvious to

one having ordinary skill in the art at the time the invention was made to store the scan lines

before encoding, and claims 3 and 10 of the patent already provide for receiving scan line data,

where it is claimed that it is a video source, which is admitted as provided by a conventional and well known display memory in at least the first full paragraph on page 4. It is practically inherent that the scan lines be stored before being processed, so that it would've been obvious to one having ordinary skill in the art at the time the invention was made to store the scan lines before interpolation.

Prior art not relied upon

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kobayashi et al., 5,442,718 - Fig. 1, blocks 4-8.

Nakayama, 5,124,790 - Fig. 6 - compare with Fig. 5 of the Drawings.

Limb, 3,824,590 - slope overload correction - abstract and Fig. 1.

Yamashita, 5,111,293 - Flip-flop in DPCM predictor in Fig. 3.

Bril et al., 5,611,041 - MVA as claimed in c. 5, lines 9-25 and c. 6, lines 24-26.

Contact Information

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Johnson whose telephone number is (703) 306-3096.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

The Group Art Unit FAX number is (703) 308-5397.

Amelia Au
Supervisory Patent Examiner
Technology Center 2700

TJ
Timothy M. Johnson
Patent Examiner
Art Unit 2723
November 14, 1998

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IMPORTANT NOTICE

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Effective November 16, 1997, the Examiner handling this application will be assigned to a new Art Unit as a result of the consolidation into Technology Center 2700. See the forth coming Official Gazette notice dated November 11, 1997. For any written or facsimile communication submitted ON OR AFTER November 16,1997, this Examiner, who was assigned to Work Group 2616, will be assigned to Art Unit 2723. Please include the new Art Unit in the caption or heading of any communication submitted after the November 16,1997 date. Your cooperation in this matter will assist in the timely processing of the submission and is appreciated by the Office.